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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,674	04/08/2005	Yasuhiro Miyamoto	Q87401	6928
65565 7590 03/12/2007 SUGHRUE-265550 2100 PENNSYLVANIA AVE. NW WASHINGTON, DC 20037-3213			EXAMINER PRESTON, ERIK D	
			ART UNIT	PAPER NUMBER
			2834	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/12/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/530,674

Applicant(s)

MIYAMOTO ET AL.

Examiner

Erik D. Preston

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/7/05 & 3/6/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/04/2006 has been entered.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the originally filed disclosure to support the limitation of the plurality of movers being connected by connecting lines only. In the specification (Page 4, Lines 19-24 & Page 11, Lines 13-16) the plurality of movers are described as being used to drive a singular moving member. Therefore, all of the movers are inherently connected to one another through this singular moving member.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 & 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (JP 2002-136096, supplied by applicant) in view of Miyamoto et al. (WO 99/41825, supplied by applicant) in view of Ehrhart et al. (WO 01/63720).

With respect to claim 1, Maekawa teaches a serial configuration linear motor (Fig. 1) constituted of a plurality of movers each formed from an armature having a winding and a stator having a permanent magnet; wherein the plurality of movers are disposed so as to face each other with a gap therebetween on the stator, the windings being connected in series, external terminals (Fig. 1, #8a & 8b) are provided on front and rear ends of the movers, but it does not teach (1) said winding being a polyphase balancing winding, or that (2) a thermister is incorporated in (3) each of the plurality of movers (Col. 8, Lines 49-51), or that (4) external terminals are provided on the front and rear ends of each of the movers so as to connect all the thermisters in series.

However, Miyamoto teaches (1) a linear motor having a polyphase balancing winding (Abstract), and (2) thermisters (Fig. 16, #7) incorporated into the plurality of movers; Ehrhart teaches that (3) each portion of a winding section should have its own temperature sensor (Fig. 1, #18a, 18b & 18c) included therein (Eng. Equivalent: US 6750576, Col. 5, Lines 19-27); and (4) connecting thermisters in series was well known

in the art at the time of the invention (such as is taught by Gul, US 6592254, Col. 2, Lines 21-27).

It would have been obvious to one of ordinary skill in the art at the time of the invention to: (1) modify the winding of Maekawa in view of the winding as taught by Miyamoto because the winding of Miyamoto zeros the sum of cogging in the motor caused by the movers (Miyamoto, Abstract); (2) include the thermisters of Miyamoto in the apparatus of Maekawa because they provide a means for sensing the temperature of motor coils Miyamoto, (Col. 8, Lines 49-51); (3) include a thermister in each of the movers of Maekawa and Miyamoto because it would provide a means for sensing the temperature of each individual coil unit (Ehrhart Eng. Equivalent, Col. 3, Lines 38-59); and (4) connect the thermisters in series using the terminals as taught by Maekawa since it would not require the use of any additional elements in the invention of Maekawa.

With respect to claim 2, Maekawa in view of Miyamoto in view of Ehrhart teaches the motor of claim 1, and both Maekawa and Miyamoto teach that the plurality of movers are of a single configuration (Maekawa, Fig. 7 & Miyamoto, Fig. 2a).

With respect to claim 3, Maekawa in view of Miyamoto in view of Ehrhart teaches the motor of claim 1, and Maekawa teaches that external terminals (Fig. 1, #8a & 8b) are provided on front and rear ends of the movers, and winding terminals of a rear-end terminal in a final mover are short-circuited with each other (Fig. 1, #10).

With respect to claim 4, Maekawa in view of Miyamoto in view of Ehrhart teaches the linear motor of claim 1, and Miyamoto teaches that the number of phases of each of the plurality of movers is set to three phases, the number of movers is set to three (as seen in Fig. 1) and phases of the respective movers are shifted from one another by 120° (Abstract).

With respect to claim 6, Maekawa in view of Miyamoto in view of Ehrhart teaches the motor of claim 1, and Maekawa teaches that the plurality of movers are (electrically) connected by connecting lines only (as seen in Fig. 1).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-4 & 6 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the plurality of movers are not connected via a spacer) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6592254 & US 6750576

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

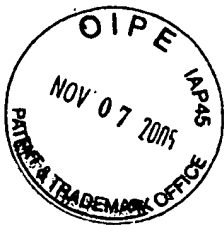
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



02/22/2007

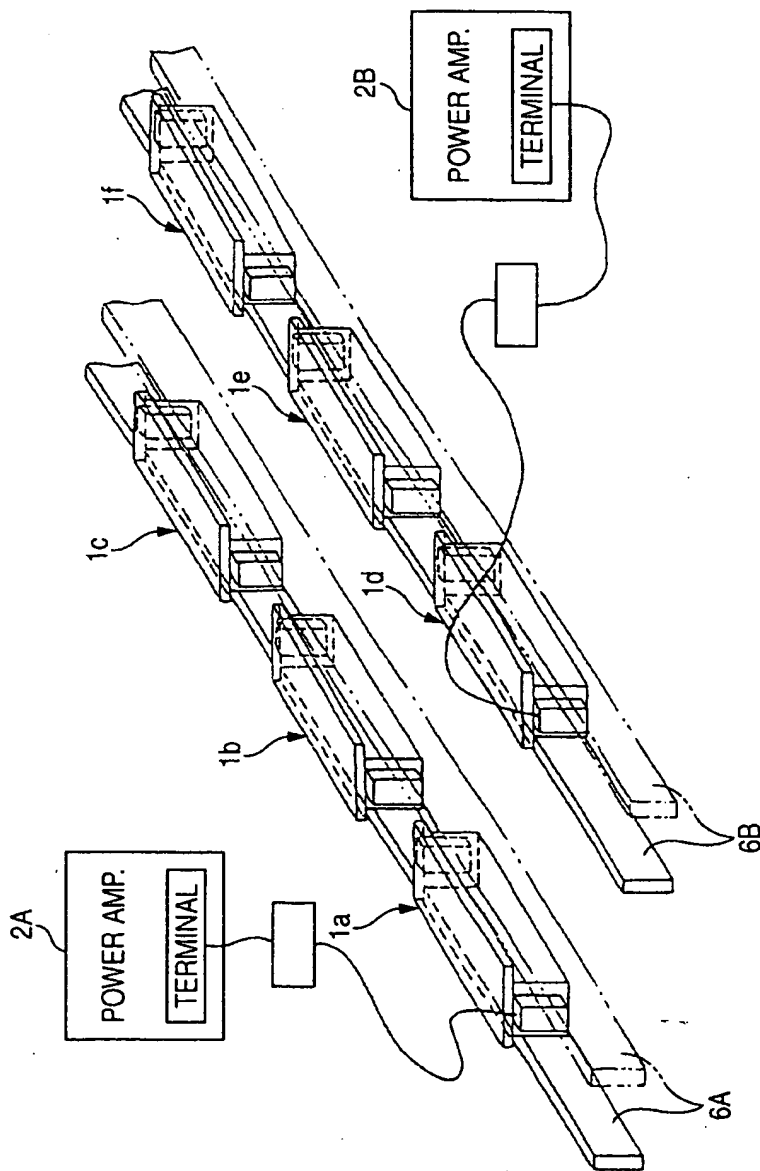
  
BURTON S. MULLINS  
PRIMARY EXAMINER



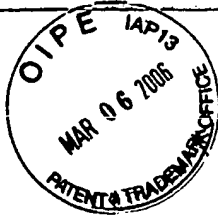
Q87401  
10/530,674 Filed: April 8, 2005  
Darryl Mexic (202) 293-7060  
Yasuhiro MIYAMOTO, et al.  
SERIAL CONFIGURATION LINEAR MOTOR  
REPLACEMENT SHEET

*Figs. 1-5 Accepted - Z*

FIG. 1







Yasuhiro MIYAMOTO, et al. Q87401  
Filed: April 8, 2005 Group Art Unit 2834  
Appl. No.: 10/530,674 Conf. No. 6928  
Responsive to the Office Action dated December 6, 2005  
For: SERIAL CONFIGURATION LINEAR MOTOR  
Replacement Sheet

Accepted - 2

FIG. 6 PRIOR ART

